

Space Weather Effects on Human Health

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In May 2000, EU Council Directive 96/29/EURATOM became legally binding on EU Member States. This Directive legislates for the control of occupational exposure of airline crews to Cosmic Radiation (CR) received while flying. The legislation came about because the International Commission on Radiological Protection (ICRP) revised their assessment of the damaging effects of some ionising radiations.

Cosmic Radiation is used to describe all the sources of radiation at aircraft altitudes that can add to the occupational exposure. The background CR originates from outside our Solar System, but is modulated by our Sun's activity, and can be enhanced by very energetic particles ejected by large Solar flares on the surface of the Sun. Such sudden enhancements could raise an individual's exposure above set annual limits in just one flight.

The airlines are responsible for assessing and monitoring exposure, and educating their aircrew of the health risks from CR. This must also include ensuring that pregnant crew reduce their flying such that the exposure to the unborn child is kept below the limit set for the General Population. Next generation commercial airliners are likely to fly for longer at higher altitudes than current models, thereby potentially raising the current levels of exposure above the present annual limits.

This talk will give a brief overview of some of the research being undertaken to assess the exposure at aircraft altitudes and the risks to human health, both now and in the future.